DOCUMENT RESUME

ED 038 940 HE 001 508

| | |
|---|---|
| AUTHOR | Pascal, Charles E.; McKeachie, W. J. |
| TITLE | Offering Course Options: Personality, Option Preference and Course Outcomes. |
| INSTITUTION | American Educational Research Association, Washington, D.C. |
| PUB DATE | 4 Mar 70 |
| NOTE | 12p.; Paper presented at the meeting of the American Educational Research Association, Minneapolis, Minnesota, March 4, 1970 |
| EDRS PRICE | EDRS Price MF-$0.25 HC-$0.70 |
| DESCRIPTORS | *Academic Performance, College Students, *Higher Education, Independent Study, *Instruction, *Learning, Lecture, *Teaching Methods, Teaching Techniques |

ABSTRACT

This study investigated the effects of offering three instructional options (lecture, lecture-discussion, and independent study) to students in a large psychology lecture class. The purpose of this study was to determine whether students do better when given their preferred method of learning, and whether the different methodology affected learning. The outcomes involved 3 major factors: 1) knowledge and comprehension of course material, 2) application of course material, and 3) evaluation of a "novel reading." The attitudes of the students toward the course were also measured. Of the 185 students in the class, 106 received their preferred option, 79 did not. Results indicated that students in their preferred option did not get better grades than the other students, but they did have a more positive attitude toward the course. Students in the lecture discussion, and lecture option performed better in terms of knowledge and comprehension than those in the independent study group, but the latter scored higher on the evaluation of a "novel article." Although 93.5% of the students favored the idea of options, it did not make any difference whether or not a student was given his choice of teaching method in terms of cognitive goals. (AF)

ED038940

# OFFERING COURSE OPTIONS:
# PERSONALITY, OPTION PREFERENCE AND COURSE OUTCOMES*

Charles E. Pascal
Centre for Learning and Development
McGill University

&

W.J. McKeachie
University of Michigan

Most students, many educational psychologists, and some teachers recognize the need to adapt instruction to individual differences. Researchers, too, have studied the effects of different methods of teaching on different kinds of students. While the results have not shown startlingly large effects, it still seems likely that some students benefit from methods of instruction ineffective for other students. Few studies have examined the effects of allowing students to choose and experience their preferred method of instruction.

If one grants the premise that teaching methods are differentially effective for different kinds of students, how do we get students into those classes where they will learn most effectively? Whether one rejoices or shudders at the prospect of matching students and teaching styles by computers, it is clear that research does not provide enough dependable information to make effective assignments.

---

* Presented at the meeting of American Educational Research Association, Division C, March 4, 1970.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

HE001 508

There is, however, an alternative to the computer student self-selection. One of the major causes of student activists has been greater student control of learning experiences. The proponents of abolition of required courses, and other constraints upon the student's determination of his own learning argue that only the student can determine what educational experiences will be most meaningful to him as an individual. This research was designed to put that assertion to the test.

This study investigated the effects of offering three instructional options (lecture, lecture and discussion, and independent study) to students in a large lecture. In addition to studying whether or not students do better when given their preferred method of learning, we also were interested in the possible differential effectiveness of the three methods on different educational outcomes.

Finally, since offering options is done on behalf of "individual differences", we wanted to see if we could learn more about what kinds of students prefer which teaching methods.

DESCRIPTIONS OF OPTIONS

1. Independent Study

Students in this method have an independent reading experience. Students are not expected to attend and are not required to take examinations. The independent reading students are expected to do considerably more reading (8-10 hours weekly) since they have more time available because they do not have to attend lectures. Each student works out his own reading program with the instructor. This program is determined in part by the course syllabus and in part by the student's own particular interests. That is, the student is encouraged to

explore readings in the library which are both relevant to the course and of interest to the students. Two written projects are required:

a. Reading log:

Will include brief abstracts of the readings and more important will include student's personal comments, criticisms, applications, and evaluations of each reading. Students will hand in the log twice during the semester for comments.

b. Term paper:

A paper on any topic of the student's choice.

2. Lecture

Students in this method take the course strictly as a lecture course. Students are expected to attend lectures and read the required material on the course syllabus. They take a midterm and final exam and write a term paper on the topic of their choice.

3. Lecture and Discussion

Students in this method also take a midterm and final exam and write a term paper. But, in addition, these students also attend a discussion group every other week (in place of a lecture). These student discussions will be based mainly on the case material. Therefore, students should plan to do the appropriate reading before each discussion session to insure productive discussions.

## THE PREFERENCE FACTOR, OPTIONS AND COURSE OUTCOMES

In order to test whether or not getting one's prefered option, which we call the "preference factor", makes any difference with respect to the course outcomes, we used a simple 2 x 3 analysis of variance or covariance with each outcome. Table 1 indicates the number of subjects by cells in the design.

Table 1

Experimental Design and Sample Sizes

| | Independent Study | Lecture | Lecture-Disc. | |
|---|---|---|---|---|
| 1st Choice | 37 | 44 | 25 | 106 |
| Not 1st Choice | 23 | 31 | 25 | 79 |
| | 60 | 75 | 50 | 185 |

The range of outcomes was fairly extensive and included three major cognitive outcomes: 1) Knowledge and Comprehension of Course Material; 2) Application of Course Material, and 3) Evaluation of a Novel Reading. In addition, we examined the experimental treatment effects on such things as "attitude towards Psychology", (experimental course was a Psychology course), course goals, and rated value of the course.

## MAJOR HYPOTHESES

### A. Effect of Preference Factor

Hypothesis 1: Students who receive their preferred option will perform significantly better in the course (i.e. receive higher grades) than students who do not receive their first choice.

Hypothesis 2: Students who receive their preferred option will indicate a more favorable attitude towards the course's field than students who do not receive their first choice.

Hypothesis 3: Students who receive their preferred option will rate the course as more valuable than students who do not receive their first choice.

### B. Effects of Methods

Hypothesis 4: Students in the lecture and lecture-discussion options will perform better on the knowledge and comprehension items on the criterion test than the Independent Study students.

Rationale: Students in both the lecture and the lecture discussion options will share the lecture experience which is mainly a "transmission of knowledge" situation. Factual

recall on the final criterion test will also be facilitated by the presence of a midterm examination which will allow students to "rehearse" recall of much of the course's content and further provide feedback regarding their comprehension of this basic objective material. As McKeachie (1963, 1967) and others have pointed out, different methods are differentially effective for different objectives and the lecture has been reported to be more effective in facilitating post-course performance on objective tests.

Hypothesis 5: Students in the lecture-discussion option and the independent reading option will perform better on the "application" part of the criterion test.

Rationale: McKeachie (1963) in summarizing the literature comparing lecture and discussion teaching, as well as the studies comparing student-oriented discussions are more effective with higher level cognitive objectives. In addition, independent reading students are encouraged and evaluated according to their ability to apply each of their readings to other readings and "real world" experiences.

Hypothesis 6: Independent reading students will be better at evaluating a novel reading.

Rationale: The major activity of independent reading students is to evaluate as succinctly as possible, each of their readings.

## R E S U L T S

The data reported in this section are results of two-way analysis of variance and covariance. The covariate design was used in three instances in which pre-course data were obtained. Table 2 summarizes the findings.

1. Grades

As Table 2 indicates, no significant main effects or interactions were obtained for grades in the course. Hence, Hypothesis 1 must be rejected.

2. Attitude towards Psychology

A significant main effect of the preference factor on attitude towards Psychology was obtained as noted in Table 2. Students in the preferred group indicated a more positive attitude towards Psychology than those in the non-preferred groups. Therefore, Hypothesis 2 is supported.

3. Value of the Course

No significant main effects or interactions were obtained for this outcome; therefore, Hypothesis 3 must be rejected.

4. Knowledge and Comprehension of Course Material

A significant main effect of option assignment on knowledge and comprehension of course material was obtained. Students in the lecture-discussion and lecture option performed better, on this outcome, than independent study students supporting Hypothesis 4.

5. Application of Course Material

No significant findings were obtained with respect to this outcome. Therefore, Hypothesis 5 must be rejected.

6. Evaluation of a Novel Article

The Table reports a significant main effect of option assignment on this outcome: the independent study students scoring better than those students in the other two options.

Students who scored high on this exercise were more apt to address themselves to an evaluation of the article bringing in relevant readings and personal experiences to illustrate their points. They were also more succinct and indicated that more organization preceded the final writing of their reaction report. This data supports Hypothesis 6.

Table 2

Summary of Findings*

| | Outcomes | Findings |
|---|---|---|
| A. | Knowledge and Comprehension of Course Material | L & L-D > I ($p < .001$) |
| B. | Application of Course Material | ns |
| C. | Evaluation of a Novel Reading | I > L-D & L ($p < .01$) |
| D. | Grades | ns |
| E. | Attitudes towards Course's Field | P > NP ($p < .01$) |
| F. | Rated Value of Course | ns |
| G. | Difficulty of Course | INP > IP ($p < .01$) |
| H. | Anxiety in Course | INP > IP ($p < .01$) |
| I. | Value of Term Paper | I > L & L-D ($p < .01$) |
| J. | Non-Required Work | I > L & L-D ($p < .001$) |
| K. | Rated Course Flexibility | I > L & L-D ($p < .001$) |
| L. | Rated Course's Influence on Creativity | I > L & L-D ($p < .01$) |

* Key: I = Independent Study
L = Lecture
L-D = Lecture & Discussion
P = Preferred (students who received preferred option)
NP = Non-Preferred

ADDITIONAL OUTCOMES

In addition to these major outcomes, several other significant findings are worth mentioning. Non-preferred independent study students rated the course more difficult and anxiety provoking ($p < .01$) than students who preferred this option.

Independent study students rated the term paper assignment more favorably ($p < .01$) than students in the other two methods. They also reported that they did more "non-required" work than lecture and lecture-discussion students ($p < .01$).

No significant main effects or interactions were obtained for this outcome; therefore, Hypothesis 3 must be rejected.

In response to the items "Course has caused me to be more creative than I normally am" and "Course has been flexible enough to allow me to pursue my own goals", Independent Study students reflected significantly greater agreement with the item than students in the other options.

Students were also asked their opinions regarding the use of options. 93.5% of the students enrolled in the course indicated that they were in favor of having options and 6.5% reported that they didn't care.

In response to the open-ended phrase "The best thing about options is....", 91.6% of the students reported that options provided them with "freedom and individualization"; 4.8% responded that options reduce the "pressure" on students; 3% made miscellaneous comments and .6% failed to respond.

Students were also asked to respond to the phrase "The worst thing about options..." 35.1% reported that the worst thing is that "you're stuck with your choice if you find out that you'd rather be in another option." 17.9% responded that "not getting your choice is the worst thing about options." 22.5% made miscellaneous comments (e.g., "find out you can't live up to the commitments of the option") and 24.5% made no comments.

INDIVIDUAL DIFFERENCES AND PREFERENCE FOR OPTIONS

For this part of the study we administered the Omnibus Personality Inventory, the Test Anxiety Questionnaire, and a General Information Questionnaire which contained a variety of questions soliciting demographic data and self-reports concerning a variety of student characteristics and habits.

Preliminary results reveal several significant differences between students preferring each of the options. Students who choose the independent study option indicate a significantly greater need for autonomy, flexibility, a higher tolerance for ambiguity, and a greater preference for abstract and scientific thinking than students who prefer the lecture option. Students preferring the lecture-discussion option are significantly moderate (less than independent choosers, greater than lecture choosers) in their preference for reflective thought and academic activities (Thinking Introversion), no different from the lecture choosers in indicating a significantly lesser interest in abstract thinking than independent study choosers, and no different from independent study choosers with respect to tolerance of ambiguity (Complexity) and autonomy.

Finally, students preferring the independent study option are more likely to have had a previous experience with this mode of learning, indicate that they do more non-required reading and indicate more enjoyment in writing papers than students who prefer other options.

We have also found that students favoring the lecture-discussion method indicate that they enjoy "bull sessions" and have more frequent informal discussions with their peers than choosers of the other options.

D I S C U S S I O N

Does it make any difference whether or not a student is given his choice of methods of teaching? The results of the present investigation revealed no differences in achieving the course's cognitive goals as a function of receiving or not receiving

one's preferred option; and only one affective outcome was affected by this factor: students receiving their first choice showed a more positive attitude towards psychology than students who did not receive their first choice. With respect to grades, course evaluation, and other outcomes, no differences were found (with the exception of difficulty of the course and anxiety within the independent study option).

Perhaps one of the main reasons why we did not find more differences due to the preference factor has to do with the instructor in the experimental course. As one non-preferred lecture student (who had preferred independent study) put it, "I'm glad I was put into the lecture because of the lecturer." Of the students responding to the phrase "The worst thing about options...", 35.1% reported that "being stuck with your choice when you find out that you'd rather be in another option." Perhaps this suggests that students don't always know the option with which they'll be most pleased; but this also suggests that maybe students should be given a brief opportunity to alter their original choices to eliminate this problem.

The study also lends support to the notion that instructional methods are differentially compatible with course goals. For example, we have shown that recall of knowledge is facilitated by the lecture and that evaluation of a novel article is better taught by the independent study method.

In addition to cognitive outcomes, an instructor may have affective objectives which are more compatible with one method than another. Although the study revealed few overall differences in achieving the course's affective goals, it is still very possible that methods do differ with respect to promoting certain affective goals. For instance, assume that an instructor would like his students to be more independent in pursuing knowledge as a result of his course. Intuitively, it would seem most likely that the independent study option, in which the students may be reinforced

for independent behavior, would be most compatible with achieving this objective. A testimony to this hypothesis are the comments of an independent study non-preferred student:

> ....At the outset, I was quite skeptical about being in the independent reading section, inasmuch as I was unsure of my ability to self-discipline myself strongly enough to get the readings completed, However, after completing the first reading I found that the material presented was extremely interesting and motivating, and that doing readings, such as these, was actually enjoyable. I believe that the structure and atmosphere of the independent reading class contributed in great measure to this feeling... Rather than feeling that I was working on a necessary evil kind of assignment, it was pleasurable to experience the freedom of independent reading and to be allowed to discover the significant material myself. I am convinced that this contributed in great measure to both the learning and memorization processes.

While this student's testimony is further support for the earlier statement that students do not always choose the "correct option", it also lends support to the idea that the independent study option is compatible with certain affective as well as cognitive goals.

Thus, the present study suggests that students were in favor of having a choice of options and that they sometimes made "bad" choices; but whether or not an instructor makes use of options must depend on his course objectives and the priorities of these objectives. If the instructor's primary goal is to have the students be pleased with the opportunity to choose their own method of learning, then offering options can be an end in itself.

If his only major goal is to develop independent thinking, then perhaps he should have all of his students exposed to independent study. Instructors vary greatly according to the types of objectives they have, and the extent to which they consider the personal goals of their students in planning their courses. There can be no doubt that an instructor who offers different options is

allowing students a greater opportunity to pursue what they think are their own goals or optimal ways of learning; but, at the same time, other goals may be sacrificed. It is, therefore, important that an instructor accept or reject and design and evaluate options with these priorities in mind.

Finally, any instructors who offer various options to students for completing the course's requirements must base their use of this technique on their desire to "adapt to the individual differences" of the students. Our present study lends support to the fact that, at least with respect to the options offered in the present course, options do appeal to different types of students with different habits, abilities and experience. Additional research should be conducted to discover whether or not these differences interact significantly with the various methods to produce effects on course outcomes. Our investigation has also shown that students are in favor of options but that effects of receiving one's preferred option are not as dramatic as predicted. Both aspects of this research suggest that a three-way design be used to test for possible interactions between personality factors, the preference factor, and instructional methods and their effects on cognitive and affective outcomes. This line of research is also being pursued.